217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT – NESHAP SOURCE

PERMITTEE

General Automation, Inc.
Attn: Mr. Edward R. Gajewski
3300 Oakton Street
Skokie, Illinois 60076

Application No.: 05030113 I.D. No.: 031288AJM
Applicant's Designation: METAL MACHINING Date Received: March 3, 2005
Subject: Precision Machining
Date Issued: December 19, 2005 Expiration Date: December 19, 2010
Location: 3300 Oakton Street, Skokie

This permit is hereby granted to the above-designated Permittee to OPERATE emission unit(s) and/or air pollution control equipment consisting of three batch vapor degreasers controlled by refrigerated condensers pursuant to the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1a. i. This federally enforceable state operating permit is issued to limit the emissions of air pollutants from the source to less than major source thresholds (i.e., 100 tons/year of volatile organic material (VOM), 25 tons/year of combined hazardous air pollutants (HAPs) and 10 tons/year of each single HAP). As a result the source is excluded from the requirement to obtain a Clean Air Act Permit Program (CAAPP) permit. The maximum emissions of this source, as limited by the conditions of this permit, are described in Attachment A.

ii. To limit the emissions of VOM from the source to less than 25 tons/year. As a result, the source is excluded from the requirements of 35 Ill. Adm. Code Part 205, Emission Reduction Market System. The maximum emissions of this source, as limited by the conditions of this permit are described in Attachment A.

b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.

c. This permit supersedes all operating permits issued for this location.

2a. Usage and emissions of volatile organic material (VOM) from all materials not used in the 3 vapor degreasers shall not exceed 1.6 tons/month and 16 tons/year. These limits are requested by the Permittee. Compliance shall be determined from a running total of 12 months of data.

b. The Permittee shall keep monthly records of VOM containing materials not used in the 3 degreasers (tons/month and tons/year) and VOM contents (weight %).

3. This permit is issued based on no VOM or HAPs used in any clean-up operations.

4. The emissions of Hazardous Air Pollutants (HAP) as listed in Section 112(b) of the Clean Air Act shall be less than 10 tons/year of any single HAP and 25 tons/year of any combination of such HAPs. As a result of this condition, this permit is issued based on the emissions of all HAPs from this source not triggering the requirements to obtain a Clean Air Act Permit Program Permit (CAAPP), and Section 112(G) of the Clean Air Act.

5a. The vapor degreaser solvent cleaning machine(s) are subject to 40 CFR Part 63, Subpart T - National Emission Standards for Halogenated Solvent Cleaning. The Illinois EPA is administering this regulation in Illinois on behalf of the United States EPA under a delegation agreement. The United States EPA issued this final rule on December 2, 1994.

b. Solvent usage shall not exceed the following limits:

Trichloroethylene Usage (Tons/Month)	Trichloroethylene Usage (Tons/Year)	HAP (e.g. Trichloroethylene) Emissions (Tons/Month)	HAP (e.g. Trichloroethylene) Emissions (Tons/Year)
0.8	8	0.8	8

These limits are based on maximum solvent usage of trichloroethylene, maximum operating hours, solvent density of 12.2 lbs/gallon and determined by material balance.

c. The Permittee shall use only Trichloroethylene as solvent.

d. For determination of compliance with the limits of this permit, solvent usage shall be determined by the following equation:

$$U = V - (W \times P)$$

Where:

U = Solvent usage for compliance determinations (gallons).

V = Virgin solvent[A] added to the solvent cleaning machines (gallons), as determined by daily addition log sheets.

W = Waste solvent[B] removed from the solvent cleaning machines and sent off-site for reclamation or disposal, as determined by monthly manifests.

P = Percent concentration of solvent in waste, as determined by analysis/testing[C].

[A] For purposes of this permit, virgin solvent is defined as unused solvent.

[B] For purposes of this permit, waste solvent is defined as used solvent.

[C] The percent concentration of solvent in waste (P) shall be determined in accordance with USEPA Test Methods for Evaluation of Solid Waste, Physical/Chemical Methods (SW-846), Test Method 8260.

e. The potential emissions of Hazardous Air Pollutants (HAP) as listed in Section 112(b) of the Clean Air Act shall be less than 10 tons/year of any single HAP and 25 tons/year of any combination of such HAPs. As a result of this condition, this permit is issued based on the emissions of all HAPs from this source not triggering the requirements to obtain a Clean Air Act Permit Program (CAAPP) Permit.

f. Compliance with the monthly organic material emission limits shall be calculated using the solvent density as specified in the Material Safety Data Sheet, and the solvent usage (U) per month, as follows:

Emissions = Solvent Usage (U) x Solvent Density
(Lbs/Month) = (Gallon/Month) x (Lbs/Gallon)

g. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months.

6. Each solvent cleaning machine must meet the following base design requirements, pursuant to 40 CFR, Part 63.463.

a. Each solvent cleaning machine must be equipped with an idling or downtime mode cover that completely covers the machine openings. The cover must be periodically inspected to ensure that it remains free of cracks, holes, and other defects. The cover must be closed at all times except during the cleaning, solvent removal, maintenance and monitoring of the degreasers.

b. A freeboard ratio of 0.75 or greater must be maintained for each solvent cleaning machine.

c. Each solvent cleaning machine must have an automated parts handling system that handles parts from initial loading to removal of cleaned parts. If the Permittee wants to use manual hoist, the Permittee must demonstrate to the Illinois EPA that the hoist can never exceed 11 feet per minute.

d. Each solvent cleaning machine must be equipped with a liquid and vapor level control device(s) that shuts off the sump heat if the sump liquid level drops to the sump heater coils or the vapor level rises above the height of the primary condenser and such device(s) must be operational at all times.

e. Each solvent cleaning machine must be equipped with a primary condenser to provide continuous condensation of rising solvent vapors and to create a controlled vapor zone.

f. Each solvent cleaning machine with lip exhaust control must be controlled by a carbon adsorption unit.

7. The Permittee shall comply with the following work and operational practice, requirements and post in the work place a one page summary of work practices, pursuant to 40 CFR Part 63.463(d).

a. Conduct maintenance as per manufacturer's recommendation to ensure that each solvent cleaning machine works properly. Any alternative maintenance practice must be approved by the USEPA.

b. Each solvent cleaning machine shall be covered to minimize air disturbances in the machine and the room at all times except during the cleaning, removal of solvent, maintenance and monitoring. If a cover cannot be used, air disturbances shall be controlled by Reduced Room Draft. Room draft shall not exceed 50 feet/minute.

c. i. A speed of 3 feet/minute or less shall be maintained between entry and removal of parts basket or parts.

or

ii. Parts basket or parts size shall be less or equal to 50% of the solvent air interface area.

d. If the cleaning operation involves spraying, spraying must be performed within the vapor zone (i.e., a baffled or enclosed area of the solvent cleaning machine).

e. The Permittee must ensure that parts or parts basket are positioned so that solvent drains freely and parts basket or parts are not removed from the machine until parts are clean and solvent dripping has stopped.

f. During the startup, the Permittee must turn on the primary condenser prior to turning on the sump pump and during shutdown, turn off the sump heater prior to turning off the primary condenser.

g. The Permittee must add and remove solvent with leak-proof couplings. The end of the pipe or hose introducing or withdrawing the solvent be located beneath the liquid solvent surface (i.e., submerged filling) in the sump.

h. The Permittee must collect and store the waste solvent, still bottoms, and sump bottoms in a closed container. Absorbent materials such as sponges, fabric, wood, and paper products shall not be cleaned.

i. Each operator of a solvent cleaning operation must be ready to take and pass an Operator Test at any time during the normal operation of the plant.

j. The cleaning machine shall have an automated parts handling system capable of moving parts or parts baskets at a speed of 3.4 meters per minute (11 feet per minute) or less from the initial loading of parts through removal of cleaned parts [40 CFR 63.463(a)(3)].

k. The vapor cleaning machine shall be equipped with a device that shuts off the sump heat if the sump liquid solvent level drops to the sump heater coils [40 CFR 63.463(a)(4)].

l. The vapor cleaning machine shall be equipped with a vapor level control device that shuts off sump heat if the vapor level in the vapor cleaning machine rises above the height of the primary condenser [40 CFR 63.463(a)(5)].

m. The vapor cleaning machine shall have a primary condenser [40 CFR 63.463(a)(6)].

n. Cover(s) to each solvent cleaning machine shall be in place during the idling mode, and during the downtime mode unless either the solvent has been removed from the machine or maintenance or monitoring is being performed that require the cover(s) to not be in place [40 CFR 63.463(d)(1)(I)].

o. The parts baskets or the parts being cleaned in an open-top batch vapor cleaning machine shall not occupy more than 50 percent of the solvent/air interface area unless the parts baskets or parts are introduced at a speed of 0.9 meters per minute (3 feet per minute) or less [40 CFR 63.463(d)(2)].

p. Any spraying operations shall be done within the vapor zone or within a section of the solvent cleaning machine that is not directly exposed to the ambient air (i.e., a baffled or enclosed area of the solvent cleaning machine) [40 CFR 63.463(d)(3)].

q. Parts shall be oriented so that the solvent drains from them freely. Parts having cavities or blind holes shall be tipped or rotated before being removed from any solvent cleaning machine [40 CFR 63.463(d)(4)].

r. Parts baskets or parts shall not be removed until dripping has stopped [40 CFR 63.463(d)(5)].

s. During startup of each vapor cleaning machine, the primary condenser shall be turned on before the sump heater [40 CFR 63.463(d)(6)].

t. During shutdown of each vapor cleaning machine, the sump heater shall be turned off and the solvent vapor layer allowed to collapse before the primary condenser is turned off [40 CFR 63.463(d)(7)].

u. When solvent is added or drained from any solvent cleaning machine, the solvent shall be transferred using threaded or other leakproof couplings and the end of the pipe in the solvent sump shall be located beneath the liquid solvent surface [40 CFR 63.463(d)(8)].

v. Each solvent cleaning machine and associated controls shall be maintained as recommended by the manufacturers of the equipment or using alternative maintenance practices that have been demonstrated to the Illinois EPA=s satisfaction to achieve the same or better results as those recommended by the manufacturer [40 CFR 63.463(d)(9)].

w. Each operator of a solvent cleaning machine shall complete and pass the applicable sections of the test of solvent cleaning operating procedures pursuant to 40 CFR, Part 63 Subpart T Appendix A if requested during an inspection by the Illinois EPA [40 CFR 63.463(d)(10)].

x. Waste solvent, still bottoms, and sump bottoms shall be collected and stored in closed containers. The closed containers may contain a device that would allow pressure relief, but would not allow liquid solvent to drain from the container [40 CFR 63.463(d)(11)].

y. Sponges, fabric, wood, and paper products shall not be cleaned in the solvent cleaning machine [40 CFR 63.463(d)(12)].

8. Each of the 2 machines with a solvent/air interface area less than 13 ft^2 must meet the following control combination requirements of freeboard refrigeration and working mode cover, and the one machine with a solvent/air interface area greater than 13 ft^2 must meet the following control combination requirements for freeboard refrigeration device, freeboard ratio of 1.0 and reduced room draft, pursuant to 40 CFR Part 63.463:

a. For Freeboard Refrigeration Device (FRD), chilled air blanket temperature at the center of the air blanket shall not exceed 57°F while using trichloroethylene.

i. Pursuant to 40 CFR 63.466(a)(1) the temperature measurements must be conducted on weekly basis at the center of the air blanket above the vapor zone during the idling mode. The temperature measurements can be taken by attaching a thermometer or a thermocouple to the parts basket or hoist hook and lowering it into the machine so

that it is in the center of the air blanket above the vapor zone.

b. i. For working mode cover, pursuant to 40 CFR 63.466(b)(1), cover must be closed over entire cleaning machine opening at all times except during parts entry and removal.

ii. A monthly inspection shall be conducted to ensure that it opens and closes properly and is free of cracks, holes, and other possible defects. If any cracks, holes or other possible defects are detected, the Permittee shall correct the defect within 15 days from the date of detection.

iii. Results of inspection shall be recorded.

c. For Reduced Room Draft (RRD), pursuant to 40 CFR 63.466(d), windspeed in room or within enclosure must be less than or equal to 50 feet/minute.

i. If windspeed in room is maintained by controlling room conditions, an initial test and a quarterly test shall be conducted to establish room condition. Also, room condition must be reestablished immediately if condition change. The Permittee shall monitor room condition every week.

ii. If windspeed in room is maintained by using an enclosure, an initial and a monthly test shall be conducted to measure windspeed in enclosure. Also, windspeed in the enclosure must be remeasured immediately if condition changes. The Permittee shall inspect condition of enclosure every month.

d. i. The Permittee shall ensure and obtain certification from the manufacturer that the freeboard height is greater than or equal to the width of the interior freeboard. Freeboard ratio shall be determined by dividing the height of freeboard to the smallest interior freeboard width. If the freeboard ratio is less than 1.0, the Permittee shall immediately correct the freeboard ratio.

ii. Record of Freeboard Ratio and any modification to the Freeboard Ratio.

9a. The Permittee shall comply with the following monitoring procedures requirements, pursuant to 40 CFR Part 63.466.

i. The Permittee shall conduct monitoring and record the results on a weekly basis for Free Board Refrigeration Device, pursuant to 40 CFR Part 63.466(a)(1). A thermometer or thermo couple shall be used to measure the temperature at the center of the air blanket during the idling mode.

ii. The Permittee shall conduct monitoring and record the results on a monthly basis for the cover (working-mode, downtown-mode,

and/or idling mode cover), pursuant to 40 CFR 63.466(b)(1). A visual inspection to be conducted to determine if the cover is opening and closing properly, completely covers the cleaning machine openings when closed, and is free of cracks, holes, and other defects.

iii. The Permittee shall conduct an initial monitoring test of the windspeed and of room parameters, quarterly monitoring of windspeed, and weekly monitoring of room parameters as per following procedures, pursuant to 40 CFR Part 63.466(d).

A. Measure the windspeed within 6 inches above the top of the freeboard area of the solvent cleaning machine using the following procedure.

1. Determine the direction of the wind current by slowly rotating a velometer or similar device until the maximum speed is located.

2. Orient a velometer in the direction of the wind current at each of the four corners of the machine.

3. Record the reading for each corner.

4. Average the values obtained at each corner and record the average wind speed.

B. Monitor on a weekly basis the room parameters established during the initial compliance test that are used to achieve the reduced room draft.

C. If an enclosure (full or partial) is used to achieve a reduced room draft, the owner or operator shall conduct an initial monitoring test and thereafter, monthly monitoring tests of the windspeed within the enclosure using the procedure specified above and a monthly visual inspection of the enclosure to determined if it is free of cracks, holes and other defects.

1. Determine the direction of the wind current in the enclosure by slowly rotating a velometer inside the entrance to the enclosure until the maximum speed is located.

2. Record the maximum wind speed.

b. The Permittee shall comply with the following monitoring procedures, pursuant to 40 CFR Part 63.466(c).

i. The Permittee shall determine the hoist speed by measuring the time it takes for the hoist to travel a measured distance. The

speed is equal to the distance in meters divided by the time in minutes (meters per minute).

ii. The monitoring shall be conducted monthly. If after the first year no exceedances of the hoist speed are measured the Permittee may begin monitoring the hoist speed quarterly.

iii. If an exceedance of the hoist speed occurs during quarterly monitoring the monitoring frequency returns to monthly until another year of compliance without an exceedance is demonstrated.

iv. If the Permittee can demonstrate to the Illinois EPA's satisfaction in the initial compliance report that the hoist cannot exceed a speed of 11 feet per minute, the required monitoring frequency is quarterly, including during the first year of compliance.

10a. The Permittee shall retain the following records on paper or computer disk for the lifetime of the solvent cleaning machine, pursuant to 40 CFR Part 63.467(a):

i. An owners manual or a written maintenance and operating procedure for each machine and each piece of control equipment.

ii. The installation date of each machine. If installation date isn't available, a letter certifying that machine was installed prior to or on or after November 29, 1993, to determine compliance option for existing or new source.

iii. Records of the halogenated HAP solvent content of each solvent used in each solvent cleaning machine.

b. The Permittee shall retain the following records in electronic or written form for a period of 5 years, pursuant to 40 CFR Part 63.467(b).

i. The results of control device monitoring required under 40 CFR Part 63.466.

A. The Permittee shall keep the weekly freeboard air temperature measurements.

B. Results of monthly inspection for working mode cover.

C. Record of freeboard ratio and any modification to the freeboard ratio.

D. The Permittee shall keep weekly records of room condition and windspeed.

E. The Permittee shall keep monthly enclosure inspection results and windspeed measurements.

ii. Estimates of annual solvent consumption for each solvent cleaning machine.

11. The Permittee shall comply with the following reporting requirements, pursuant to 40 CFR Part 63.468:

a. An initial statement of compliance report demonstrating each machine is in compliance must be submitted no later than 150 days after startup. The initial compliance report shall include the following:

i. Name and address.

ii. Facility location address.

iii. A list of control equipment (i.e., FRD, RRD) used on each machine to comply with the rule.

iv. For each piece of control equipment required to be monitored, a list of the parameters that are monitored and the values of these parameters measured on or during the first month after the compliance date.

v. For reduced room draft, the weekly record of room temperature and windspeed or monthly enclosure inspection results and windspeed measurements.

b. An annual compliance report must be submitted by February 1, of the year following the year the report covers. The compliance report shall include the following:

i. A statement, signed by the owner or operator or someone designate, stating that, "All operators of solvent cleaning machines have received training on the proper operation of solvent cleaning machines and their control devices sufficient to pass the test required by 40 CFR 63.463(d)(10)."

ii. Solvent consumption and HAP emissions for each machine in lb/month and ton/year, for the reporting period.

c. An exceedance report shall be submitted every 6 months if there is not an exceedance, and every 3 months if there is an exceedance. If an exceedance did not occur the report would consist of a statement certifying that there were no exceedances. The frequency of the exceedance report will increase to quarterly after an exceedance occurs. The quarterly exceedance report shall include the following:

i. Information on the actions taken to comply with 40 CFR Part 63.463(e) and (f). This information shall include records of written or verbal orders for replacement parts, a

description of the repairs made, and additional monitoring conducted to demonstrate that monitored parameters have returned to accepted levels.

ii. If an exceedance has occurred, the reason for the exceedance and a description of the actions taken.

iii. If no exceedances of a parameter have occurred, or a piece of equipment has not been inoperative, out of control, repaired, or adjusted, such information shall be stated in the report.

d. The Permittee shall submit an exceedance report within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

e. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least 5 years, unless specifically stated in the permit, from the date of entry and shall be made available for inspection and copying by the Illinois EPA and USEPA upon request. Any records retained in a computer shall be cable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA request for records during the course of a source inspection.

12. The batch vapor degreaser shall be operated in accordance with the following operating and equipment requirements of 35 Ill. Adm. Code 218.183:

a. Operating Requirements: No person shall operate the batch vapor degreaser unless:

i. Solvent carry out emissions are minimized by allowing parts to dry within the degreaser until visually dry;

ii. The degreaser is not loaded to the point where the vapor level would drop more than 10 cm (4 in) when the workload is removed from the vapor zone;

iii. Solvent leaks are repaired immediately;

iv. Waste solvent is stored in covered containers only and not disposed of in such a manner that more than 20% of the waste solvent (by weight) is allowed to evaporate into the atmosphere;

v. Water is not visually detectable in solvent exiting from the water separator; and

vi. Exhaust ventilation exceeding 20 cubic meters per minute per square meter (65 cubic feet per minute per square foot) of degreaser open area is not used, unless necessary to meet the requirements of the Occupational Safety and Health Act (29 U.S.C. Section 651 et. seq.).

b. Equipment Requirements: No person shall operate the batch vapor degreaser unless;

i. The degreaser is equipped with a cover designed to open and close easily without disturbing the vapor zone;

ii. The degreaser is equipped with the following switches;

A. One which shuts off the sump heat if the amount of condenser coolant is not sufficient to maintain the designed vapor level; and

B. One which shuts off the spray pump if the vapor level drops more than 10 cm (4 in) below the bottom condenser coil; and

C. One which shuts off the sump heat source when the vapor level exceeds the design level.

iii. A permanent conspicuous label summarizing the operating procedure is affixed to the degreaser.

13. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least five years from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA or USEPA request for records during the course of a source inspection.

14. If there is an exceedance of the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

15. Two (2) copies of required reports and notifications concerning equipment operation or repairs, performance testing or a continuous monitoring system shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

If you have any questions on this, please call Randy Solomon at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:RBS:psj

cc: Illinois EPA, FOS Region 1
Lotus Notes

Attachment A - Emission Summary

This attachment provides a summary of the maximum emissions from the precision machining plant operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the annual operating scenario which results in maximum emissions from such a plant. The resulting maximum emissions are well below the levels, e.g., 25 tons/year of volatile organic material (VOM) and combined hazardous air pollutants (HAPs), and 10 tons/year of each single HAP at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less material is handled, and control measures are more effective than required in this permit.

	VOM (Tons/Year)	Combined HAPs (Tons/Year)	Trichloroethylene (Tons/Year)
3 Vapor Degreasers	8.0		8.0
All Other Materials	16.0		
Totals:	24.0	< 25	< 10

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